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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/596,262	06/07/2006	Klaus Hahn	12810-00264-US1	4654
23416 7590 05/12/2009 CONNOLLY BOVE LODGE & HUTZ, LLP P O BOX 2207 WILMINGTON, DE 19899			EXAMINER WINKLER, MELISSA A	
			ART UNIT	PAPER NUMBER
			1796	
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/596,262	Applicant(s) HAHN ET AL.	
	Examiner MELISSA WINKLER	Art Unit 1796	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 30 January 2009.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-7 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-7 is/are rejected.
- 7) ☒ Claim(s) 7 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Objections

Claim 7 is objected to because of the following informalities: for clarity, it is suggested Claim 7 be amended to read "The expandable, pelletized styrene polymer material according to claim 1."

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1 – 3, 5, and 6 are rejected under 35 U.S.C. 102(b) as being anticipated by US 5,010,111 to Hahn et al.

Regarding Claims 1 and 2. Hahn et al. teach expandable styrene polymers comprising a styrene polymer component that may be polystyrene and/or a copolymer composed of styrene and a monomer such as α -methylstyrene. The styrene polymer has a mean molecular weight (M_w) of 60,000 to 200,000. However 0.1 to 10% of the

styrene polymer may have an M_w of 500 to 5,000 (Column 1, Lines 24 - 24 and 49 - 67; Column 2, Lines 20 - 24).

Regarding Claims 3 and 6. Hahn et al. teach the styrene polymer of Claims 1 and 2 wherein the material comprises 1 to 10% by weight of a blowing agent such as a C_3 to C_6 aliphatic hydrocarbon (Column 3, Lines 38 – 44).

Regarding Claim 5. Hahn et al. teach a process of producing foam moldings in which the expandable polystyrene particles of Claim 1 are pre-foamed using steam to a bulk density of 15 g/l. Then, the particles are welded to form a block in a mold (Column 5, Lines 1 – 7).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over US 5,010,111 to Hahn et al., as applied to Claim 1 above, and further in view of EP 0 126 469 to Biglione et al.

Regarding Claim 4. Hahn et al. teach a process for preparing expandable styrene polymers by first preparing the mixture set forth in Claim 1. The blowing agent can be added before, during, or after polymerization. The resultant polymers have a mean diameter from 0.1 to 6 mm (Column 3, Line 60 – Column 4, Line 7).

Hahn et al. do not teach the claimed process steps of mixing the blowing agent at a temperature of at least 150°C, cooling the polymer melt to at least 120°C, and pelletizing the melt underwater at a pressure in the range of 1 to 25 bar. However, Biglione et al. also teach a method of making expandable polystyrene granules in which polystyrene and a blowing agent are blended at a temperature of 160°C. The resulting mixture is extruded through a die head (Example 1). The temperature for extrusion is adjusted according to the size of the holes in the die head. When the holes have a diameter between 2 – 4 mm, the melt must be extruded at a temperature between 100 and 130°C (Page 7, Lines 8 – 18). The die head protrudes into a chamber in which water is circulated at a pressure of 9 bar to produce expandable polystyrene granules (Example 1). Hahn et al. and Biglione et al. are analogous art as they are from the same field of endeavor, namely expandable polystyrene particles. At the time of invention, it would have been obvious to a person of ordinary skill in the art to use the method taught by Biglione et al. to prepare the expandable styrene beads taught by Hahn et al. The

motivation would have been that the method taught by Biglione et al. provides advantages such as producing polystyrene particles with a more standardized shape.

Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over US 5,010,111 to Hahn et al., as applied to Claim 1 above.

Regarding Claim 7. Hahn et al. teach the polymer of Claim 1 wherein styrene polymer has a mean molecular weight (M_w) of 60,000 to 200,000 (Column 1, Lines 24 - 24 and 49 - 67; Column 2, Lines 20 - 24). While applicant has claimed a styrene polymer having a molar mass in the range of 220,000 to 300,000 g/mol, a *prima facie* case of obviousness exists where the claimed ranges and prior art do not overlap but are close enough that one skilled in the art would have expected them to have the same properties. *Titanium Metals Corp. of America v. Banner*, 778 F.2d 775, 227 USPQ 773 (Fed. Cir. 1985) (MPEP 2144.05).

Response to Arguments

Applicant's arguments filed January 30, 2009 have been fully considered but they are not persuasive because:

A) Applicant argues that only polymers with high and low molecular weight fractions having the same chemical composition can be obtained from the disclosure of

Hahn et al. However, Hahn et al. set forth the expandable polystyrene polymers of the invention, designated principal component (a), may be comprise polystyrene and/or styrene copolymers (Column 1, Lines 49 – 52). Thus, when principal component (a) comprises polystyrene and styrene copolymers, the chemical composition of the styrene polymers comprising principal component (a) must necessarily be different.

B) Regarding applicant's argument that only polymers of the same chemical composition can be obtained by the preferred conventional suspension polymerization process, an invention is not bound to its preferred embodiments. Furthermore, instant Claim 4 is not directed to a process for obtaining styrene polymers but instead a process for preparing expandable, pelletized styrene polymer materials from a mixture of styrene polymers. As indicated above, it is the Office's position that Hahn et al. teach mixtures of styrene polymers with different chemical compositions.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Correspondence

Any inquiry concerning this communication or earlier communications from the examiner should be directed to MELISSA WINKLER whose telephone number is (571)270-3305. The examiner can normally be reached on Monday - Friday 7:30AM - 5PM E.S.T..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mark Eashoo can be reached on (571)272-1197. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Mark Eashoo/
Supervisory Patent Examiner, Art Unit 1796

MW
April 28, 2009